UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI
EASTERN DIVISION

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	**Case No. 4:06CR0638 CDP/TCM**
	)	
JOHN BERGER,	)	
	)	
Defendant.	)	

MEMORANDUM

This matter is before the Court on the motion of defendant, John Berger, to dismiss Counts I, III, and IV of the indictment on the grounds of vagueness. [Doc. 44] An evidentiary hearing was held on May 22 and May 23, 2007, at which Defendant produced the testimony of Laureen J. Marinetti, Ph.D., and the Government produced the testimony of Deborah L. Zvosec, Ph.D., and James V. DeFrancesco, Ph.D. Also at the hearing, Government's Exhibits 2 through 8 and 10 through 12 were admitted into evidence; Exhibit 9 was excluded. Defendant's Exhibits 1 through 5, 7 through 11, and 15 through 18 were admitted into evidence.[1]

Based upon the evidence adduced at the evidentiary hearing and the applicable law, the undersigned finds and concludes as follows:

---

[1]The parties were directed to provide and file a clean set of exhibits with the Clerk of Court. Following the evidentiary hearing, Defendant filed three supplemental exhibits, labeled A, B, and C. The Court did not consider these exhibits because they were not introduced into evidence during the evidentiary hearing.

Findings of Fact

(1) Dr. Marinetti has a Ph.D. in Pharmaceutical Science with a concentration on psychology. (Def. Ex. 9.) She is currently the Chief Forensic Toxicologist in the Coroner's Office for Montgomery County in Dayton, Ohio. Dr. Marinetti's doctoral dissertation was on the behavioral pharmacology of GVL in rats as compared to GHB, GBL, and BDO.[2] (Id.) At the evidentiary hearing, Dr. Marinetti testified about her dissertation research and findings using a"PowerPoint" presentation. (Def. Ex. 13.)

(2) Dr. Zvosec has a Ph.D. in Medical Anthropology and is currently an investigator and research associate at the Minneapolis Medical Research Foundation. (Gov't Ex. 6.) One hundred percent of Dr. Zvosec's research is devoted to health risks related to GHB. Dr. Zvosec has written a number of publications which concentrate on GHB and its effect on the body. (Id.)

(3) Dr. DeFrancesco has a Ph.D. in Physical-Organic Chemistry and is a Senior Forensic Chemist for the United States Drug Enforcement Agency ("DEA"). (Gov't Ex. 8.) Dr. DeFrancesco has written a number of publications relating to GHB and has testified in several federal trials. The latter concentrates on comparing the chemical makeup of various substances to other substances in an effort to assist the courts in their determination of whether a particular substance is a controlled substance analogue.

(4) A "controlled substance analogue" is defined in 21 U.S.C. § 802(32)(A) as:

---

[2]The acronyms and chemical names for the substances relevant to this Memorandum are contained in Paragraph (5) of these Findings of Fact.

The term "controlled substance analogue" means a substance –

(i) the chemical structure of which is substantially similar to the chemical structure of a controlled substance in schedule I or II;

(ii) which has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II; or

(iii) with respect to a particular person, which such person represents or intends to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II.

21 U.S.C. §§ 802(32)(A)(i), (ii), and (iii).

Subsection (C) provides, in relevant part:

Such term does not include –

(iv) any substance to the extent not intended for human consumption before such an exemption takes effect with respect to that substance.

21 U.S.C. § 802(32)(C)(iv).

(5) The relevant substances, their chemical formula, and the acronyms by which the Court will refer to the substances are listed as follows:

GHB – Gamma-Hydroxybutrate; $C_4H_8O_3$. GHB is a Schedule I Controlled Substance.
BD 1,4 or BDO 1,4 – Butanediol; $C_4H_{10}O_2$
GVL – Gamma-Valerolactone; $C_5H_8O_2$
GHV – Gamma-Hydroxyvalerate; $C_5H_8O_3$
GBL – Gamma-Butyrolactone; $C_4H_6O_2$

(6) It is undisputed that atoms are the basic building blocks of all matter and molecules are comprised of atoms. The chemical formula is the number and types of atoms in a compound or molecule. (Gov't Glossary, Doc. 91.) The terms "compound" and "molecule"

are often used interchangeably. (Id.) Comparing two substances' chemical formulas to determine whether the two substances are substantially similar under the analogue statute is insufficient. Rather, one must look at the chemical structure[3] of two substances and compare the differences and similarities in order to determine whether the two substances are substantially similar under the analogue statute's first prong. See 21 U.S.C. § 802(32)(A)(i).

(7) GVL is substantially similar to the chemical structure of GBL. Both GVL and GBL have similar chemical structures and both are closed compounds.[4] The major difference between the two is that GVL contains a methyl group (CH_3) and GBL does not. GBL metabolizes in the human body into GHB. In an artificial environment, GVL metabolizes into GHV. As will be discussed below, there have been no human studies on GVL and GHV; consequently, there is no direct evidence that in human beings GVL metabolizes into GHV.

(8) GBL's chemical structure is substantially similar to that of GHB; therefore, the first prong of the Analogue Statute, 21 U.S.C. § 802(32), is satisfied. Although GBL is a closed

---

[3]"Chemical structure" is the term used in 21 U.S.C. § 802(32)(A)(i) for what must be substantially similar to a controlled substance in order for the non-listed substance to meet the first prong of the analogue statute.

[4]The use of the term "closed" or "closed compound" is best illustrated in Government's Exhibits 11 and 12. Government's Exhibit 11 depicts the chemical structure of GHV and GVL. GHV is considered an open compound in that there is an open end in the structure. GVL is a closed compound in that the structure has no open end. Government's Exhibit 12 depicts GHB and GVL and again GHB is open and GVL is closed. The most inclusive list of relevant compounds is depicted on page 15 of Government's Exhibit 9. The Court excluded that exhibit for reasons set forth in the transcript; however, page 15 depicts the chemical structures of GVL, GBL, GHB, BD, and MSG. Although Defendant's objection to the exhibit for reasons unrelated to its substance was sustained, the information on this page is undisputed and referred to in much of the testimony from both Dr. Marinetti and Dr. DeFrancesco. For ease of reference, the Court will refer to that page when discussing the various chemical structures.

compound and GHB is an open compound, the chemical grouping and connectivity of the two compounds are similar, and neither compound has a methyl group. GBL metabolizes in the human body into GHB.

(9) It is undisputed by the parties that the chemical structure of BDO is substantially similar to that of GHB and, therefore, the first prong of the Analogue Statute is satisfied. Both BDO and GHB are open compounds, and neither contains a methyl group. (Gov't Ex. 9 at 15.) BDO metabolizes in the body to GHB.

(10) GHV's chemical structure is substantially similar to that of GHB; therefore, the first prong of the Analogue Statute is satisfied. Both GHV and GHB are open compounds. The major difference between the two compounds is that GHV contains a methyl group and GHB does not. (Gov't Exs. 11 and 12.) Unlike BDO and GBL, GHV does not metabolize in the human body into GHB.

(11) GVL and GHV are analogues of one another. Both contain a methyl group. The major difference is that GVL is a closed compound and GHV is open. (Gov't Ex. 11.)

(12) The controlled substance, GHB, is an open compound. Other open compounds at issue are BDO and GHV. The two "L" compounds, GVL and GBL, are closed compounds.

(13) It is Dr. DeFrancesco's testimony that GVL's chemical structure is not substantially similar to that of GHB and, therefore, it does not meet the first prong of the Analogue Statute. As noted in paragraph (7) above, GVL is a closed compound and contains a methyl group. GHB is an open compound and contains no methyl group. Additionally, GVL does not

metabolize into GHB but rather converts into GHV. These two differences – the presence of the methyl group in GVL and the closed ring in the structure of GVL – are enough to disqualify GVL as a structural analogue of GHB.

(14) On the other hand, it is the testimony of Dr. Marinetti that GHV and GVL are analogues of GHB. She finds the chemical structures of GVL and GHV to be substantially similar to GHB's and the structural features of GVL and GHV to be the same. Chapter 11 of History and Pharmacology of the Y-Hydroxybutyric Acid was written by Dr. Marinetti. In that chapter, she references other studies which found GHV, but not GVL, to be a structural analogue of GHB. (Gov't Ex. 4.)

(15) Dr. Marinetti believes that GVL is more chemically similar to GHB than is BDO. It takes two steps in a human body to convert BDO into GHB, i.e., it must be acted upon by two enzymes in the body. It takes only one step to convert GVL into GHV. Because there are no human studies on GVL or GHV, however, this conclusion is derived from placing GVL into a basic pH solution where the GVL converts into GHV.

(16) GVL is a Food and Drug Administration ("FDA") approved food additive which is safe for human consumption at low dosages – .0009322 milligrams for each kilogram per day per person, which equates to 0.065 milligrams per day for the average man, or less than a teaspoon of liquid. GHB is a central nervous system ("CNS") depressant. In order to determine if the pharmacological effects of GVL are similar to GHB and comparable drugs, Dr. Marinetti measured the acoustic startle reflex of rats. This test measures the "jump" reflex, the amount of movement, associated with an unexpected sound loud enough to startle

the rat. The rats were injected with GVL, GBL, BDO, or GHB and presented with 20 noise bursts. The rats were injected with 0, 200, 400, 800, and 1600 mg/Kg of GVL and 0, 50, 100, 200, and 400 mg/Kg of GHB, or four times the dosage of GVL to GHB. The test results recorded by Dr. Marinetti revealed that GVL has CNS depressant effects similar to GHB, GBL and BDO. Dr. Marinetti's thesis was submitted in 2003. Dr. Marinetti has conducted no further similar studies. Although Dr. Marinetti's opinion extrapolates her study results from rats to human beings, there are no scientific studies or evidence to show that either GVL or GHV have the same effects as GHB on humans. There have been similar studies (Quang 2002 and Carter 2005) on mice that confirm Dr. Marinetti's findings in small animals.

(17) Dr. Zvosec testified that the toxic effects of GHB include: "[d]rowsiness, somnolence, dizziness; [l]ethargy, stupor; [a]mnesia; [n]ausea, vomiting, incontinence; [l]oss of consciousness, often abrupt, . . . ; [a]gitation, combativeness, self-injurious behavior; [h]ypothermia, slowed heart-rate; [t]remor, myoclonus, seizure-like activity; [h]orizontal and/or vertical nystagmus; [c]oma, respiratory depression, death[.]" (Gov't Ex. 9 at [4].)

The primary cause of death in the use of GHB is cardiorespiratory arrest – a stoppage in breathing. (Id. at [5].) Warnings by the FDA in 1990 and 1997 about the dangers of GHB, resulted in the emergence of GHB analogues such as GBL and BDO. (Id. at [6].) BDO toxicity is the same as that of GHB. (Id. at [13].) There has been considerable research on the effects of GHB on humans and some information is available on the effects of BDO in humans.

(18) There are no GVL/GHV toxicity case studies or single case reports in clinical journals nor any therapeutic or administration studies on humans. There are no human studies on GHV or GVL use other than anecdotal reports. Much of the limited anecdotal reports demonstrate that GVL is less effective than GHB for euphoria, stimulation of sexual effects, and sedation.

(19) GVL made its appearance around 2001 primarily through the product "Tranquili-G." Tranquili-G is marketed on the Internet as an "excellent Valium alternative" which is "great for deeper sleep." (Def. Ex. 13 at [4].) It also stimulates "growth hormone release" and is advertised as an alternative to the controlled substance GHB. (Id. at [5].) Promotions on the product include:

> Tranquil-G [sic] is the trade name for ***4-pentanolide*** (patent pending). Upon ingestion, Tranquili-G is converted via lactonase catalyzed hydrolysis – the same mechanism by which GBL is converted to GHB (1) – to the potent GHB analogue, 4-methyl-GHB (see *). 4-methyl-GHB has been found to bind to the GHB receptor with 15% GREATER affinity_than GHB itself (2). Gamma-hydroxybutyrate exerts its effects through specific GHB receptors (3), thus consumption of a precursor to a compound which binds to the GHB receptor would be expected to result in physiological and psychological effects quite similar to those produced by GHB, such as sedation, reduction of anxiety, and stimulation of growth hormone release. source: www.musclesoft.com

(Id.)

(20) GHB and BDO have a "steep dose response," meaning that there is a small difference between the dose producing the desired effect and a dose producing a coma. There is no evidence of a steep dose response for GVL. There are numerous reports and evidence of overdoses associated with trauma relating to GHB and BDO, but no similar clinical reports

on GVL and GHV. There is clinical evidence of withdrawal with serious effects while on GHB and BDO and none relating to the use of GVL and GHV.

(21) There is evidence of only two GVL products: Tranquili-G and Growth Hormone Roller, the latter applied to the forearms. There is no evidence before the Court of any product containing or alleged to contain GHV. Dr. Marinetti reports that her office tests for GHV in drug-facilitated sexual assault cases, but there has been no evidence "directly stating" the use of GHV.

(22) There are legal restrictions on testing GVL and GHV on humans. This type of research is customarily performed on rats and mice first and then moves up the chain to animals that more closely resemble humans, e.g., monkeys. There is no evidence that these two substances have been tested on any animals other than mice and rats.

(23) Section 58-37-2(1)(g)(i) and (ii) of the Utah Code Annotated defines controlled substance analogues. (Def. Ex. 8.) GVL is listed as a controlled substance analogue. Utah Code Ann. § 58-37-5.5(2)(i). It is not, however, connected to any of the controlled substances listed in Utah's five Schedules of controlled substances. Utah Code Ann. §§ 58-37-4(2)(a), (b), (c), (d) or (e). The Court finds no mention of the controlled substance GHB in any of the Utah analogue statutes.

(24) Defendant has introduced various exhibits from the DEA, the National Drug Intelligence Center ("NDIC"), the Department of Justice, and the Executive Office of the President of the United States. (Def. Exs. 1, 2, 3, 4, 5, 7, and 14.) Generally these publications are produced to provide information to law enforcement officers and others

interested in the proliferation of illegal drugs. Six refer to GVL and GHV as analogues of GHB. (See Ex. 1 at 7; Ex. 2 at 6; Ex. 3 at 2, 3; Ex. 4 at 15; Ex. 5 at 1; Ex. 7 at 1, 2.) In the May 2003 edition of the DEA's Microgram Bulletin, there is an admonition that the reader should refer to the January issue for a disclaimer. (Def. Ex. 1 at 1.) That disclaimer reads as follows:

> All material published in either Microgram Bulletin is reviewed prior to publication. However, the reliability and accuracy of all published information are the responsibility of the respective contributors, and publication in Microgram Bulletin implies no endorsement by the United States Department of Justice or the Drug Enforcement Administration.

(Gov. Ex. 2 at 27.)

Discussion

Defendant argues the indictment against him must be dismissed on the grounds that, because GHV or GVL meet the statutory definition of a controlled substance analogue of the controlled substance GHB as defined in 21 U.S.C. §§ 802(32)(A) and (C) and are not prosecuted as such, the Analogue Statute is void for vagueness.

"[V]ague statutes are void." **United States v. Washam**, 312 F.3d 926, 930 n.2 (8th Cir. 2002) (alteration added). Vagueness challenges to statutes, like the one now at issue, which do not involve First Amendment rights are examined "in the light of the facts of the case at hand." **United States v. Mazurie**, 419 U.S. 544, 550 (1975) (citing United States v. Nat'l Dairy Products, 372 U.S. 29, 32 (1963)). Moreover, "statutes are not automatically invalidated as vague simply because difficulty is found in determining whether certain marginal offenses fall within their language." **Nat'l Dairy Products**, 372 U.S. at 32 (noting

that the Supreme Court "consistently" seeks interpretations of statutes which support their constitutionality).

"An overly vague statute 'violates the first essential of due process of law,' because citizens 'must necessarily guess at its meaning and differ as to its application.'" **United States v. Bamberg**, 478 F.3d 934, 937 (8th Cir. 2007) (quoting Connally v. Gen. Constr. Co., 269 U.S. 385, 391 (1926)). In determining whether a statue is void for vagueness, the courts have applied a two-part test. **Id.** "The statute, first, must provide adequate notice of the proscribed conduct, and second, not lend itself to arbitrary enforcement." **Id.** (citing Kolender v. Lawson, 462 U.S. 352, 357 (1983)). Defendant's motion addresses only the second part of the test.

This part is "the more important aspect" of the vagueness doctrine, and requires that "a legislature establish minimal guidelines to govern law enforcement." **Kolender**, 462 U.S. at 358 (interim quotations omitted). "Where the legislature fails to proscribe such minimal guidelines, the criminal statute may permit 'a standardless sweep [that] allows policemen, prosecutors, and juries to pursue their personal predilections.'" **Id.** (quoting Smith v. Goguen, 415 U.S. 566, 575 (1974)) (alteration in original).

Although there is no case directly on point, the Eighth Circuit Court of Appeals has held that the three requirements set out in §§ 802(32)(A)(i), (ii), and (iii) are to be read in the conjunctive. **United States v. Washam**, 312 F.3d 926, 930 n.2 (8th Cir. 2002). "Thus, part (i) must be satisfied and *either* part (ii) or part (iii) must also be satisfied." **Id.** (citing U.S.

v. Forbes, 806 F. Supp. 232, 235-36 (D. Colo. 1992)) (emphasis added). The chemical compounds at issue in **Washam** were monosodium glutamate ("MSG"), a common food additive that also becomes GHB in the human body, and BDO. **Id.** at 929. The defendant argued that the Analogue Statute lent itself to arbitrary enforcement because it allowed for a distinction between the two. **Id.** Allowing that there was "some superficial appeal" in the defendant's comparison between the two compounds, the court held that the statute did "not allow for arbitrary enforcement because the statute itself requires a two-step inquiry before law enforcement may extend its application to a new chemical." **Id.** at 932. The first step was "to determine whether a chemical is substantially similar in chemical structure to a listed chemical." **Id.** (citing § 803(32)(A)(i)). In the case at hand, MSG "may be" substantially similar to GHB, and BDO was so. **Id.** The second step was "the requirement that the chemical either has the same effect as the listed chemical on the human body, or its is intended to have such an effect." **Id.** (citing § 802(32)(A)(i) and (ii)). ". . . MSG does not have similar effects on the human body, nor do food producers intend for MSG to have the same effects as GHB." **Id.** BDO, however, did have a similar effect on the human body as did GHB. **Id.** BDO satisfied the second step; MSG did not. **Id.** "Thus applying the Analogue Statute to [BDO] and not to MSG is not proof of arbitrary enforcement, rather it is proof that the statute is narrowly drawn to proscribe only those chemicals which are dangerous and intended to be used in an illegal manner." **Id.** See also **United States v.**

Orchard, 332 F.3d 1133, 1138 (8th Cir. 2003) (reaching same conclusion to same argument about MSG and BDO).

In resolving Defendant's vagueness challenge, this Court applies the same analysis employed by the Eighth Circuit to the chemical compounds GHV and GVL compared to the controlled substance GHB. If these two compounds fit within the confines of the Analogue Statute and satisfy the two-part test in §§ 802(32)(A)(i), (ii), and (iii), they are controlled substance analogues to GHB pursuant to the statutory definition. If they are such controlled substances but are freely and legally available for purchase in the United States while BDO is not available because it is considered to be an illegal controlled substance analogue of GHB, then the Analogue Statute as applied to BDO is unconstitutionally vague.[5] This is so because the analysis allows for an ad-hoc subjective decision by law enforcement officers and prosecutors. See **Forbes**, 806 F. Supp. at 238-39.

GHV

There is no dispute that GHV's chemical structure is substantially similar to that of GHB. Both are open compounds. The only significant difference is that GHV contains a methyl group and GHB does not. Therefore, the first prong of the Analogue Statute is satisfied.

The first part of the second prong requires that GHV must have a stimulant, depressant, or hallucinogenic effect on the CNS that is substantially similar to or greater than the effect of

[5]The Court disagrees with Defendant's suggestion that the entire Analogue Statute must be voided for vagueness if it found to be constitutionally vague as to BDO. See **Nat'l Dairy Products** 372 U.S. at 32.

a Schedule I or II controlled substance. GHV has never been tested on humans and there is scant anecdotal evidence that supports the proposition that the effects are similar.

Dr. Zvosec gave significant, credible testimony, see paragraphs 17 through 22, above, distinguishing the effects of GHV and GVL from the effects of GHB. Dr. Zvosec describes these distinctions as they relate to the animal studies and confirms that there are no studies on humans and very little anecdotal reports. Dr. Zvosec testified that the majority of these anecdotal reports support her position, and the Court agrees.

The second part of the second prong of the Statute requires that "with respect to a particular person" there is a representation that the relevant substance has effects on the CNS similar to or greater than the effect of the controlled substance. There is no evidence before the Court that any product has been sold making this claim regarding GHV.

Finally, § 802(32)(C)(iv) requires that the substance be intended for human consumption. Again, there is no evidence that any product containing GHV is being sold or distributed for human consumption. Thus, although GHV meets the first prong of the Analogue Statute, it satisfies neither part of the second prong. Accordingly, the Court finds that GHV is not a controlled substance analogue of GHB.

GVL

Working in reverse, GVL meets the second part of the second prong of the Analogue Statute.[6] The advertisements and promotions for Tranquili-G satisfy the criteria in

[6]Because the Court has found that § 802(32)(A)(iii) has been satisfied, there is no need to address the pharmacological effect part of the second prong, § 802(32)(A)(ii). Were the Court to

§ 802(32)(A)(iii) in that its makers represent or intend that their product has the same stimulant and depressant effects on the CNS as does GHB. (See Def. Ex. 13 at 4, 5.)

As discussed above, the first prong of the Analogue Statute requires that GVL have a chemical structure substantially similar to that of GHB's to be considered an analogue of GHB. Here, the experts differ.

Dr. DeFrancesco opines that GVL does not have a substantially similar chemical structure to GHB, citing two differences. First, GHB is an *open* compound and GVL is a *closed* compound, and second, GVL *contains* a methyl group (CH_3) and GHB *does not*. This reasoning is consistent with the comparisons of the chemical compounds that are substantially similar in structure to GHB – BDO, GHV, and GBL. BDO and GHB are both open compounds and neither contains a methyl group. GHV and GHB are both open compounds; however, GHV contains a methyl group. GBL and GHB both contain a methyl group; however, GBL is a closed compound. Thus, the compounds with substantially similar chemical structures share one or both important characteristics, i.e., open or closed compounds or containing or not a methyl group. GVL shares neither characteristic with GHB.

---

do so, however, the Court would repeat its discussion on GHV and then make the same findings. There is not sufficient evidence before the Court to extend Dr. Marinetti's study on the effects of GVL on rats to humans and conclude that GVL as the same pharmacological effects on humans as does GHB. Additionally, as before when discussing GHV, the Court accepts the testimony of Dr. Zvosec as summarized in paragraphs 17 through 22 of the Findings of Fact.

On the other hand, Dr. Marinetti opines that GVL's chemical structure is substantially similar to that of GHB's. This conclusion is undermined, however, by Dr. Marinetti's erroneous interpretation of the Analogue Statute:

> Q. Now when you talk about structure, you're talking about the chemical make-up of the substance. Is that correct?
>
> A. Yes.
>
> Q. So you're saying structurally in the chemical make-up, it's not a structural analogue, but chemically similar, yes, it is. So it is an analogue.
>
> A. As define by the law, yeah.
>
> Q. But two of the three criteria to be considered a controlled substance analogue, that comes from the federal statutes, doesn't it.
>
> A. The chemical similarity, yes.
>
> Q. In other words, when you're talking about two of these there criteria, the three criteria that you're describing in that paper in 2003 was a criteria that the federal statue is based upon.
>
> A. Yes. Well, yes and no. It's structural — *It doesn't say "structural analogue" in the federal criteria. It says substantial chemical similarity.*

(Unofficial Tr. at 109; emphasis added.)

Dr. Marinetti's recollection that the Analogue Statute says "substantial chemical similarity" is incorrect. Instead, the Statute defines a controlled substance analogue as one whose "chemical structure" is "substantially similar" to the chemical structure of the controlled substance. See 21 U.S.C. § 801(32)(A)(i). Dr. DeFrancesco testified that comparing the chemical formula of two substances is insufficient under the Analogue Statute. Rather, the chemical structure formula is examined to make the necessary similarity determination.

Additionally, according to Defendant's proposed Finding of Fact #53, "under the chemical definition of a structural analogue, BDO is not an analogue to GHB." The Eighth Circuit Court of Appeals has found to the contrary, holding in **Orchard**, 332 F.3d at 1138, and **Washam**, 312 F.3d at 933, that BDO is a controlled substance analogue of GHB; therefore, its chemical structure is substantially similar to that of GHB's.

Moreover, although the Court is convinced that Dr. Marinetti believes that BDO is an analogue of GHB, it is her opinion that it is scientifically impossible to conclude that BDO is an analogue of GHB, but GVL is not. (See Def. Findings of Fact #63.) The Court finds the reasoning of Dr. DeFrancesco more compelling and more consistent with the Analogue Statute.

Accordingly, the Court finds that GVL is not an analogue of GHB.

Because neither GHV nor GHV are analogues of GHB, Defendant's vagueness argument fails.[7] His motion to dismiss the indictment should be denied.

As directed by the Honorable Catherine D. Perry, trial in this matter has been set for July 9, 2007, at 9:00 a.m.

/s/ Thomas C. Mummert, III
THOMAS C. MUMMERT, III

[7]The issue of DEA publications has arisen in this case. Apart from the DEA's disclaimer set forth in paragraph 24, above, the Court does not find the DEA exhibits or arguments based thereon to be of use in determining whether GHV or GVL are analogues of GHB. The DEA and other agencies that produce and promote those documents are not the entities that determine whether or not the possession of a substance is a crime. Congress creates the laws; the courts are charged with interpreting them. Simply because a government agency proclaims a substance to be illegal does not make it so.

UNITED STATES MAGISTRATE JUDGE

Dated this 5th day of June, 2007.